



Injection Control Module User's Manual

(Cat. No. 1771-QD/B)

Using This Update

Use this Documentation Update with:

- Injection Control Module User's Manual
(publication 1771-6.5.49) dated June 1990
- Injection Control Module User's Manual Documentation Update
(publication 1771-6.5.49-DU2)

This document:

- corrects errors in the previous update 1771-6.5.49-DU2 (page 1)
- clarifies the definition and application of:
 - IB31, Minimum Percent Shot Size for Pressure Transition (page 2)
 - Profile Ramp Rates (page 2)
- describes enhancements for Revision C of the 1771-QD/B module (page 4)

Keep this document with your manual.

Correct Errors in DU2 for Appendices A and C

Disregard the corrections to pages A-1 and C-6 in documentation update 1771-6.5.49-DU2. The original manual was correct for these pages.

(Page A-1) The following original ranges and units are correct:

- [7] 0-9999 %-travel per second
- [8] 0-9999 %-open per second
- [9] 0-9999 %-close per second

One or more of these changes also appear on pages A-3, A-5, A-6, and A-9.

(Page C-6) The following original ranges and units are correct:

Integer Range	0 to 09999 (9999% = full stroke in 10ms)
BCD Range	0 to 9999
Units	Percent travel per second

This change also appears on pages C-6, C-22, C-24, C-32, C-39, C-40, C-52.

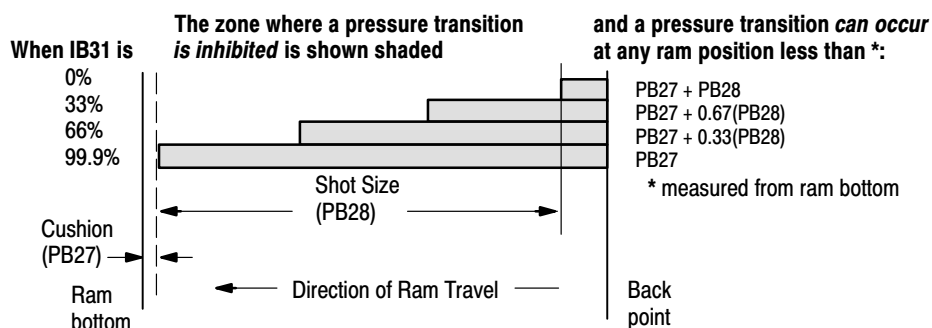
Clarification of IB31, Minimum % Shot Size for Pressure Transition

Chapter 2 (page 2-8) and Appendix C (page C-21)

Change text to the following:

IB31 Minimum Percent Shot Size for Pressure Transition

To guard against premature pressure transitions from pressure spikes, you can program the QD module to allow a ram or cavity pressure transition only after the ram (screw) injects a percentage of the shot size. Starting near the back point, the ram (screw) is inhibited from a pressure transition as it moves right to left until it reaches a percent shot size that you select. For example:



Ranges and units are:

Integer Range	0 to 099.99
BCD Range	0 to 99.99
Units	Percent shot size traversed

Clarification of Profile Ramp Rates

Appendix C (pages C-6, -22, -24, -32, -40, -52)

Add the following to word descriptions CB10, IB32,33,41,42, PkB17,18, HB21,22, and PB35,36;

We define the range of ramp rate as 0 to 9999% per second, where 9999% = full stroke in 10ms.

For example, ramping 100% of output in 1/4 second equals 400% per second. You would enter typical ramp rates as follows:

For this ramp rate	Enter this value
100% in 10ms	9999
100% in 100ms	1000
100% in 250ms	400

Use this procedure to compute ramp rates:

1. Convert pressure setpoints to percent of maximum pressure.
(Velocity setpoints already are in units of percent.)
2. Subtract the setpoints (in percent) to obtain the step change (in percent) over which you want to ramp.
3. Determine how fast (in what part of a second) you want the ramp to occur.
4. Divide the time into the step change from step 2 to compute the ramp rate.

Example:

Compute the acceleration ramp rate required to change from 600 to 1800 PSI in 1/5 second for a system with 2400 PSI maximum pressure.

1. Convert pressure setpoints to percent of maximum pressure.

$$600 \text{ PSI} \div 2400 \text{ PSI} = 25\% \quad 1800 \text{ PSI} \div 2400 \text{ PSI} = 75\%$$

2. Subtract setpoints to obtain ramp range in percent.

$$75\% - 25\% = 50\%$$

3. Ramp time is 1/5 second, defined in the example problem.

4. Divide ramp time into the step change to compute the ramp rate.

$$50\% \text{ step change} \div 1/5 \text{ second ramp time} = 50\% \times 5 = 250\% \text{ per second}$$

$$\text{Answer} = 250\% \text{ per second}$$

**Enhancements for
Firmware Revision C**

Chapter 10
(page 10-1)

Add to the table at the bottom of page 10-1:

If this LED	is this color	Then the QD module sees this condition	We recommend this corrective action
ACTIVE mode.	green	Lost communication with the processor.	1. Verify the processor is in run
FAULT	off	The QD module received a valid config block, but has not received a block transfer from the PLC processor in the time-out period.	2. Check for a processor fault.
AUTO	flashing		3. Troubleshoot your ladder logic.

**Enhancements for
Firmware Revision C
(continued)**

Appendix A

(page A-3)

Replace
CB36-40 RFU

with the following:

CB36-63 RFU
CB64 Reserved for module – Do not use.

(page A-13)

Replace
IS42-50 RFU

with the following:

IS42 Maximum Cavity Pressure in Injection Phase
IS43-50 RFU

(page A-14)

Replace
PkS15-20 RFU

with the following:

PkS15 Maximum Cavity Pressure in Pack Phase
PkS16-20 RFU

Replace
HS17-20 RFU

with the following:

HS17 Maximum Cavity Pressure in Hold Phase
HS18-20 RFU

Enhancements for Firmware Revision C (continued)

Appendix C
(page C-12)

Replace CB36 thru CB40	Reserved	Not monitored by the QD module
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with the following:

CB36 thru		
CB63	Reserved	Not monitored by the QD module
CB64	Reserved	Reserved for module – Do not use

(page C-88)

Replace	
IS42 thru	
IS50	Reserved Zero when returned by the QD module

with the following

IS42	Max Cavity Pressure During Injection	Returns the highest cavity pressure recorded during the injection phase.	
		Integer Range	0 to 20000 PSI CB05-B16(14)=0 0 to 2000.0 Bar CB05-B16(14)=1
		BCD Range	0 to 9999 PSI* CB05-B16(14)=0 0 to 999.9 Bar* CB05-B16(14)=1

* Double this value when CB05-B17(15)=1

IS43 thru IS50 Reserved	Zero when returned by the QD module
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(page C-91)

Replace	
PkS15 thru	
PkS20 Reserved	Zero when returned by the QD module

with the following

PkS15	Max Cavity Pressure During Pack	Returns the highest cavity pressure recorded during the pack phase.		
	Integer Range	0 to 20000 PSI	CB05-B16(14)=0	
		0 to 2000.0 Bar	CB05-B16(14)=1	
	BCD Range	0 to 9999 PSI*	CB05-B16(14)=0	
		0 to 999.9 Bar*	CB05-B16(14)=1	

* Double this value when CB05-B17(15)=1

PkS16 thru PkS20 Reserved	Zero when returned by the QD module
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**Enhancements for
Firmware Revision C
(continued)**

(page C-94)

Replace

HS17 thru

HS20 Reserved

Zero when returned by the QD module

with the following

HS17 Max Cavity Pressure

During Hold

Returns the highest cavity pressure
recorded during the hold phase.

Integer Range 0 to 20000 PSI CB05-B16(14)=0

0 to 2000.0 Bar CB05-B16(14)=1

BCD Range 0 to 9999 PSI* CB05-B16(14)=0

0 to 999.9 Bar* CB05-B16(14)=1

* Double this value when CB05-B17(15)=1

HS18 thru

HS20 Reserved

Zero when returned by the QD module



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